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What personality traits are most likely to predispose technicians to engage at work?



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I hereby declare that the work submitted is mine and that where I have made use of another's work, I have attributed the source(s) according to the Regulations set in the Student's Handbook.

ABSTRACT

Engaged employees are the core asset of any organization and the most distinct competitive advantage.

This study aims enhancing insights into the relation between personality traits and employee engagement. In particular, with the assistance of a paper-based survey, data were collected from 76 subordinate technical personnel working in automotive and heavy machinery sectors. The independent variables were the five core personality traits - Conscientiousness, Extraversion, Openness, Agreeableness, Neuroticism – which were measured by selecting a Five Factor Model specifically developed for the workplace. The dependent variable was employee engagement and its three sub-dimensions –Vigor, Dedication, Adsorption - using W. Schaufeli validated inventory. Descriptive and inferential analyses indicated Conscientiousness as the most significant predictor of employee engagement. Additionally, multiple linear regression analysis showed Extraversion and Openness to be positively correlated with engagement. On the contrary, Agreeableness was negatively correlated with engagement. The main contribution of this study is to provide managers and recruiters within the field of this sector the tendency of which personality traits are most likely to predispose technicians to engage at work. However, survey's moderate number of participants registered a tendency and set the foundations for future studies that should further test and analysis larger group of data for better understanding the impact of personality on employee engagement.



This dissertation is dedicated to my love of my life son George...that he may find engagement and satisfaction in all moments of his life.

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1. INTRODUCTION

Employee engagement is an emerging concept that has garnered tremendous attention the last decades, not only from researchers, but also organizations and companies because of the many positive consequences that profit both firms and employees.

Pioneer engagement researcher *William Kahn (1990)* defined work engagement as “the harnessing of organization members’ selves to their work roles”. Based on Kahn’s qualitative study, many researchers have learned a significant amount of information that is now beginning to be employed in practical applications by human resource managers and practitioners (*Shuck, B., & Wollard, K., 2010*). Historically, researcher community has focused on examining the adverse consequences of *job burnout* which is defined by “extreme exhaustion and loss of dedication and passion for one’s job” (*Maslach, C., Schaufeli, W. B., & Leiter, M. P., 2001*). Through the extensive research, job burnout has been conceptualized as a psychological affliction with regard to the chronic exposure on work related stressful situations with negative repercussions for both job performance and individual health. However, the predominant research on negative psychological states, such as burnout, has just recently shifted its attention to the positive side, namely employee engagement, since interventions towards engagement are more effective than preventing burnout (*Schaufeli, W. B., Salanova, M., González-romá, V., & Bakker, A. B., 2002*).

Research studies demonstrated that engagement has many positive outcomes and predominately contributes to high job performance and productivity levels (*Harter, J. K., Schmidt, F. L., & Hayes, T. L., 2002*), while may result, according to *Schaufeli and Bakker (2004)*, in better physical and mental health. Besides higher productivity level, engagement promotes positive attitudes towards the organization, strong organizational commitment and employees’ retention (*Saks, A. M., 2006*). Although, engagement benefits at organization and individual level have been documented, it is approximately estimated that less than 30% of the workforce is engaged in the workplace (*Harter et al., 2002; B. Shuck & Wollard, 2010*) and the incurred cost of unengaged workers to the firm that employ them, amounts to 35% of the firm’s total payroll.

Regardless of the significant interest generated by engagement discussion, there is room for more research, since most of the studies examined factors external to individual’s personality such as organizational support, procedural justice (*Saks, 2006*) and job enrichment design (*May et al., 2004*). On the contrary, there is space for more research to be done on individual’s internal factors, such as personality traits that may act as determinants to engagement, since *Kim et al. (2009)* and

Langelaan et al. (2006) have identified various relationship between personality and engagement, though significant gaps in the literature continue to exist. On top of that, there are no studies with representative samples that cover different occupational groups in order to obtain regulative scores that can be utilised as an industry benchmarks against which individual or aggregated engagement scores can be compared (*Schaufeli Wilmar B., 2012*).

Hence, the aim of this study is to examine the relationship between personality traits and work engagement on a specific occupational group of employees. Specifically the research population is solely composed of bottom line automotive and heavy equipment technical employees working mainly on After Sales Service department of various companies from the region of Thessaloniki.

Research model for exploring the personality construct is the Big Five Personality Trait Model (*McCrae, R. R., & Costa, P. T., 1997*) which divides individual's personality into five major core characteristics: Conscientiousness, Neuroticism, Extraversion, Agreeableness and Openness. A conscientious employee exhibits concentration, discipline and methodicalness. Neuroticism refers to employee's tendency to experience negative emotions, like anxious and depression and low level of resilience. Extravert employee is characterized by positive emotions, optimistic, assertive, sociable and self-confident. Agreeable employee is generally considered as more tender, caring, and empathic, while Openness refers to the curious, imaginative and inventive way workers are dealing with complexity and stressors. The other pillar of the study is the dependent variable of employee engagement and has been defined as an optimistic, satisfying, emotional motivate state of job-related well-being, characterized by vigor, dedication and absorption (*Schaufeli et al., 2003*). Consequently, these three different dimensions, namely vigor, dedication and absorption, are the composed elements of engagement construct, therefore, according to *Schaufeli et al. (2003)*, each research should examine the degree of these contributory factors toward the formation of the engagement.

1.1 BACKGROUND OF THE STUDY

Since the revolutionary scientific methods of *Frederick Taylor (1911)* during the previous century who studied the relationship between inefficiency and decreased profitability, many things have changed. However, the core principles that Taylor wanted to address were industry-related issues that affected negatively a firm's profitability. Specifically, those issues were low productivity, high employee turnover, and work conflicts all of which are predominantly factors

strongly related with employee engagement according to *Macey et al. (2008)*, *Shuck & Wollard (2010)*. Although the advent of technological breakthroughs have altered altogether production methods and industrial capacity, in turn industrialist's effort to sustain and increase productivity and profitability has been focused to employee psychology and organizational behaviour. Though, over the past few years due to prolonged economic deterioration, work redesign, structural adjustments redundancies and increased workload due to less employees, have resulted employees' moral, commitment and engagement to have been severely affected (*Psychogios et al., 2019*). It goes without saying that in such competitive economic environment many leaders and managers have long realized that attracting and retaining an engaged employee it will be an added value for the organization and a key factor for sustaining a competitive advantage against competitors. Thus, from the historical perspective we can realize the significance and how relevant today is the construct pertaining to employee engagement.

1.2 STUDY RATIONAL

The aforementioned sector of After Sales Service, which employs mainly technical staff, operates the last decades in an extremely complex environment due to radical changes that occur at fast pace. The extensive use of computers and network technology that support autonomous drive, a well-established technology for more than five years on construction and agricultural industry, have changed the technical maintenance mode of operation to technical service mode. European environmental stringent regulations initiated fast-paced changes on emissions standards as well, thus breakthrough technologies on engines follow suit, causing an extra burden for technical staff to assimilate all these so far unknown technical solutions for minimizing harmful engine's by-products. On top of technical competences that someone has to possess, working in a workshop also requires a diverse range of additional professional competences such as communication skills, attention to customer satisfaction, marketing attitude, active learning, effective time management and ability to adapt. Given the significant of one's personality, identically, this dissertation tries to bring in light personality traits that are attributed to this specific occupational group and affect positively engagement as the most decisive attribute that one's has to possess so as to copy with all these complexities and challenges.

Additionally, the study relies on the fact that some recent reports and studies show that employee engagement level does not have the desired positive outcome when means and strategic interventions have been utilized for this purpose, such as training, carrier opportunities, autonomy

and flexible working policy according to Gallup research and *Knight et. al. (2017)* study. On top of the uncertain effectiveness of these actions, are also cost-intensive and time-consuming. Consequently, the potential benefits of pre-employment assessment of employee's personality traits for identifying predictors of engagement is indisputable, while such a strategy can be incorporated into the human resource selection system (*Rothstein, M. G., & Goffin, 2006*).

1.3 STUDY PARTICULARITIES

This study contributes to the body of research on the topic of engagement by possessing three particularities:

- 1) Examines to what extent each five factor of personality contributes to employee engagement, namely Conscientiousness, Neuroticism, Openness, Extraversion, and Agreeableness.
- 2) Utilizes a specific personality instrument (WorkPlace Big Five Profile or WPB5) developed for the workplace. For more information on the WPB5 please refer to Chapter 3.
- 3) Focuses on a specific occupational group, namely technical staff from automotive and heavy equipment sectors in order to identify engagement's magnitude.

1.4 STUDY QUESTIONS

Previous studies that investigated the relationship between personality dimensions and employee engagement found the following results:

- a) Negative correlation between Neuroticism and engagement ($r = -0.13$, $p < .05$) (*Kim et al., 2009*), ($r = -0.312$, $p < .01$) (*Janssens et al., 2019*), ($r = -0.48$, $p < .01$) for vigor and ($r = -0.40$, $p < .01$) for dedication (*Langelaan et al., 2006*).
- b) Significant positive correlation between Conscientiousness and engagement ($r = 0.37$, $p < .01$) (*Kim et al., 2009*), ($r = 0.33$, $p < .01$) (*Janssens et al., 2019*). Additionally, in the case of Janssens et al. (2019) Extraversion showed strong correlation with engagement ($r = 0.44$, $p < .01$) while on Langelaan et al. (2006) no significance was found.
- c) Insignificant correlation was found between Agreeableness and Openness with engagement on both studies (*Kim et al., 2009; Janssens et al., 2019*).

For more information regarding past research conducted on examining personality traits with employee engagement please consult the section “PERSONAL ANTECEDENTS OF ENGAGEMENT” in Chapter 2.

- 1) The *first question* of this study examines the tendency between the five personality dimensions and engagement by running a Pearson Correlation analysis. More specifically and taking into consideration previous studies, the pertaining hypotheses are as follows:

H1: Conscientiousness and Extraversion are positively related to engagement.

H2: Neuroticism is negatively related to engagement.

H3: Agreeableness and Openness will be not significantly correlated with engagement.

Given the importance of proactive personality assessment for indentifying candidates who are more likely to be engaged in their work role, this study then tries to distinguish personality traits that are sound predictors of employee engagement. For this purpose, multiple repressions analysis is utilized in order to identify a formula that best forecasts engagement based on different combinations of personality traits.

- 2) Hence, the *second question* of this study examines the personality traits/ factors that best predict employee engagement.

The third question measures how engagement varies across each personality traits. In this case, through one-way ANOVAS this study explores differences between engagement mean score, as dependent variable, across different categories of each personality trait, as an independent variable.

- 3) Hence, the *third question* of this study measures differences in engagement across each personality continuum.

Finally, this study tries to understand wheter there are additonal attributes and patterns that may affect employee level of engagement. More specifically, this study explores through ANOVAS the relationship between the dependent variable of employee engagement with the help of the descriptive independent variables such as age, years of experience in this field, working years in the same company and educational level.

- 4) Hence, the *fourth question* of this study examines to what extent research descriptive characteristics affect employee engagement.

1.5 OVERVIEW OF THE STUDY

The following chapters of this study are organized as follows: Chapter 2 reviews the breadth and depth of employee engagement construct and the Five Factor Model of personality. Chapter 3 presents research methodology and instruments that were used for collecting data. Chapter 4 presents data analysis and results. Finally, chapter 5 presents findings, limitations, conclusions and recommendations for future research.

2. REVIEW OF LITERATURE

2.1 INTRODUCTION

The literature review for this study has been composed by searching on several databases including LexisNexis Academic, EBSCO, JSTOR, Google Scholar, ResearchGate.net online libraries such as Wiley and Taylor & Francis focusing on specific academic journals related to industrial/organization psychology, personnel psychology, organization behavior, human resource and business management and economics. For revealing the underlying theory of work/employee engagement construct in conjunction with personality attributes various terms were used including *work/employee engagement*, *antecedents and consequences of work engagement*. Additionally for exploring the underlying theory of trait models and specifically the Five Factor Model or FFM the following terms were used including *personality traits*, *personality inventories and pools*, *Big Five model of personality*.

This chapter first presents the multiple conceptualizations of employee engagement and shows how these have been evolved over time, then synthesizes the theoretical framework and analyzes conceptually adjacent constructs in order to argue engagement uniqueness and then presents the antecedents and consequences which are associated with employee engagement. Finally, since the aim of the present study is to identify the relation between personality and work engagement, this chapter then presents the sub-domains of the Five Factor Model (FFM) ([McCrae et al., 2005](#)).

2.2 EMERGENCE THEORY AND NAME DEBATE

Employee engagement is a relative new discipline since it was detailed examined firstly in the influential work of [Kahn \(1990\)](#) who is considered the founding father of this construct. Over the course of time, employee engagement theory has been evolved through the intensive research shedding light on many ambiguous facets of it, such as antecedents and consequences, the conceptual framework and proximity with other constructs. However, more need to be explored in order foundational tenets of the construct to be fully operationalized. On top of this, debate with regard to the name of the construct is still lacking since researchers and academics have not agreed yet on the formal name for the underlying construct. Some refers to the construct as *work*

engagement (*Schaufeli & Bakker, 2003; Schaufeli, Bakker, & Salanova, 2006*), while others as *employee engagement* (*Harter et al., 2002; Saks, 2006; Wollard & Shuck, 2011*). In this dissertation the term employee engagement will be used whenever possible, however often references to work engagement may be necessary in terms of context but having the same meaning.

2.3 KAHN'S DEFINITION OF EMPLOYEE ENGAGEMENT

Over the course of years, engagement research has been characterized by ambiguous construct definitions and operationalizations (*Macey & Schneider, 2008*), as a result there are different definitions of employee engagement among different scholars, practitioners and industrial organization psychologists. The construct of employee engagement was first documented by *William Kahn (1990)* who employed a qualitative study in order to develop a theory that explains the underlying construct of engagement at work. The interpretation of Kahn's qualitative study showed that workers do not demonstrate engagement based on one underlying construct, but rather, the author argued, workers apply themselves in their respective work roles with vary degrees of physical, emotional and cognitive effort. Therefore, the author defined employee engagement "as the harnessing of organization members' selves to their work roles; in engagement people employ and express themselves physically, cognitively and emotionally during role performances" (p.695). Since Kahn's conceptualization, many researchers have been followed proposing different definitions.

2.4 EMPLOYEE ENGAGEMENT A MULTI-FACETED CONSTRUCT

Many researchers reported that employee engagement is a multi-faceted construct, namely some components had to be established primarily in order engagement to be developed afterwards. *May et al. (2004)* contended that engagement is the effect of three psychological conditions – meaningfulness, safety and availability – exhibiting considerable positive relations with the engagement construct. *Wellins and Concelman (2005)* stated that engagement is a mixture of devotion, loyalty, productivity and accountability. *Saks (2006)* defined employee engagement as a different and unique concept which encompasses knowledge, emotion and behavior. Moreover, *Macey and Schneider (2008)* suggested to regard employee engagement as a multi-dimension term which includes different types of engagement such as traits engagement, psychological state engagement and behavioral engagement. The component of engagement as an attitude (trait

engagement) can be considered as a tendency and inclination to experience the life and work positively, while this positive affectivity reflected in psychological state engagement through feeling of energy and absorption causing behavioral engagement to take place in terms of discretionary efforts. Additionally, [Bakker \(2009\)](#) stated that employee engagement is the byproduct of two drivers, job and personal resources. Job resources stimulate personal growth, learning and development while reduce the negative impact of job demands and stress. On the other hand, personal resources pave the way engagement to be instilled easier on workers who possess specific personal characteristics such as optimism, competence and stress-free and stoical attitude. These resources, Bakker argued, assist engaged employees to regulate and define their working environment successfully.

2.5 EMPLOYEE ENGAGEMENT AS POSITIVE STATE OF MIND

[Schaufeli et al. \(2002\)](#) defined employee engagement an optimistic, satisfying, emotional motivate state of job-related well-being, characterized by vigor, dedication and absorption. Moreover, Schaufeli supports that engagement is not a short-lived and an unidimensional psychological state, on the contrary engagement refers to a more persistent and penetrative affectional cognitive state that is not expressed instantaneously on a certain object, event or individual. The three fundamental pillars of engagement are vigor which is characterized by high levels of zest and action, dedication is characterized by a sense of persistence, adherence, enthusiasm and pride, while absorption is characterized by being fully committed and deeply concentrated in one's work. [Zeng and Han \(2005\)](#) defined that engaged employees exhibit a long lasting optimistic and motivational attitude during work, ready to dispose themselves to work at any time, and at the same time they demonstrate positive emotions such as enthusiasm and delightful on the task they have to accomplish.

2.6 BURNOUT AS ANTIPODE OF ENGAGEMENT

The last decades increased attention has been given to what has been considered positive psychology, the scientific study of human strength and optimal functioning. Thus, one of these positive psychological states at work is engagement and together with burnout are considered to be two ends of the same continuum.

Maslach et al. (2001) stated that engagement is characterized by energy, participation and effectiveness in contrary to three burnout features of exhaustion, cynicism and reduce professional efficacy, while this study seems to confirm that to a certain extent burnout and engagement are antipodes. On top of that, *Schaufeli and Bakker (2004)* stated that vigor and dedication are direct opposites of exhaustion and cynicism respectively. Interestingly though, is what was stated by *Gonzalez-Roma et al. (2006)* that emotional exhaustion and vigor as well as cynicism and dedication are two different and hidden dimensions, while *Demerouti et al. (2010)* agreed that cynicism and dedication are two opposite ends of ‘attitude dimension’, though the confirmatory factor analyses rejected the theory that exhaustion and vigor are opposites ends of so called ‘energy dimension’.

2.7 CONCEPTUAL FRAMEWORK OF EMPLOYEE ENGAGEMENT

The theoretical framework contributes to better understanding the factors and determinants of employee engagement. This study presents under which conditions, prerequisites and work characteristics employee engagement takes place. Besides, to date, there is no unique theoretical framework for employee engagement, since different researchers approach employee engagement from different perspectives. In this assessment the models that explain employee engagement are needs-satisfaction model, Job Demands-Resources model (JD-R) and social exchange theory.

Kahn's (1990) study shed light on three psychological conditions that have to be satisfied in order employee engagement to be established. Psychological meaningfulness is defined as the ‘sense of return on investments of self in role performance’, and is related with work characteristics that assist specific conditions to be satisfied and in turn contribute positively or, in the absence of them, negatively to personally engage. Safety is the sense of being able to show and employ confidence without worry of negative repercussions to self- image, status or career and is related with characteristics of social systems that create more or less nonthreatening, predictable and trustful social situations in which to engage. Finally, availability is the sense of possessing the physical, emotional and psychological resources necessary for investing self in role performance and in case this state is not adequately present individual diversions that characterized people to various degree left them with more or fewer recourses with which to engage in role performance. Consequently, according to Kahn, people vary their personal engagement based on how they realize their working roles according to meaningfulness, safety and availability and whether these conditions are not satisfied most likely they will withdraw and defend themselves.

Another domain that explains employee engagement is the one that related with psychological and physiological work characteristics. The “JD-R model” generally categorizes employees’ working conditions into job demands and job resources (*Bakker et al., 2007; Demerouti et al., 2001; Schaufeli et al., 2009*). Job demands are defined as those features of the job that demand a sustained physical or physiological effort of the individual, subsequently leading to certain physiological and psychological costs. Job resources are defined to those features of the job, enabling individuals to accomplish work goals, to reduce the job demands, or to stimulate personal growth, learning, and development. Job resources include autonomy, skill variety, social support, and opportunities for development. Thus, according to JD-R model it can be assumed that employees are more likely to engage with their work when job resources outweigh job demands.

Finally, according to social exchange theory (SET) there is a mutual relationship between employer and employee in which a request for return will lead to advantageous results for both parties. At the same time the party that gets something of value will produce a sense of responsibility to return the other party (*Masterson et al., 2000*). *Saks (2006)* argued that one way for employees to contribute to their organization is through their level of commitment and engagement. In other words, employees will choose to engage themselves to varying degrees in response to the resources they received from their organization.

2.8 EXPLORING RELATED TERMINOLOGY OF ENGAGEMENT

As we explore thoroughly the notion of engagement, reasonably an emerging question is whether employee engagement constitutes truly a unique construct or simply a restated term (*Saks, 2006; Macey & Schneider, 2008*). Consequently, this chapter analyzes and distinguishes various related concepts such as job satisfaction (JS), organizational commitment (OC) and job involvement (JI).

Many authors (*Macey & Schneider, 2008; Rich, 2006*) argued that JS and engagement are not identical terms, since the former is a positive behavior one express about one’s job, while the latter indicates activation. Similarly, *Rich (2006)* stated that JS refers to the positive evaluation resulting from specific job attributes but this does not necessary result in the investment of positive energy on the job. Furthermore, JS is a descriptor of job conditions and characteristics whereas

engagement at work is a description of an individual's experiences resulting from the work (*Brief & Weiss, 2002*). Therefore, engagement is more than simple satisfaction with work conditions and attributes or basic loyalty to the employer. In contrast, engagement is about passion and dedication, the willingness to invest oneself and expend one's discretionary effort to help organization succeed (*Erickson, 2005*). Besides, while engagement requires persistence, vigor, absorption and enthusiasm, none of these characteristics are necessary element of JS.

Organizational commitment according to *Bashaw and Grant (1994)* explains one's attachment with his organization as opposed to employee engagement that represents a more complex and thorough perspective on the relation between the individual and work (*Maslach, Schaufeli & Leiter, 2001*). On top of that, OC refers to one's attitude towards his or her organization, the same is not valid for engagement since is not an attitude but rather the degree to which an individual is mindful and absorbed in the performance of his or her roles. Finally, *Macey and Schneider (2008)* stated that commitment is an important precursor of engagement and it is related to feelings of gratification and the willingness one's to spend energy in favor of his or her organization.

Another construct that sometimes is closely related with engagement in social sciences literature is job involvement. However, the main discrepancy between these two constructs is the fact that JI refers to individual's identification and how the job satisfies one's self-image and enhance social status while according to *May et al. (2004)*, engagement has to do with how individuals harness themselves in the execution of their job. In other worlds, engagement encompasses the active use of emotions and behaviors while JI is about the degree to which the work setting is applicable to each person attribute.

2.9 ANTECEDENTS AND OUTCOMES OF EMPLOYEE ENGAGEMENT

What matters most when we try to better interpret employee engagement construct is the identification of those factors that decisively contribute to the establishment of this notion. A review on many past researches have shown that the most influencing factors can be grouped into three categories: organizational and structural antecedents, job antecedents and finally personal antecedents. On the other hand, regarding the outcomes of employee engagement this research

focus mainly on two aspects, those related to employee and organizational performance. These factors and outcomes are presented in the following lines.

2.9.1 ORGANIZATIONAL ANTECEDENTS OF ENGAGEMENT

Organizational antecedents can be considered all these aspects that taken place and fostered within one's organization such as organizational support ([Saks, 2006](#)), procedural justice ([Saks, 2006](#)), co- worker relations ([Kahn, 1990](#); [May et al., 2004](#)), alignment between employees and organizational values ([Kahn, 1990](#); [Rich, 2006](#)), and leadership style ([Kahn, 1990](#); [May et al., 2004](#)). [Saks \(2006\)](#) reported that what matters most from employee's perspective is the sense of organizational care and support for one's effort. Consequently, this interaction between employee and organization creates a sense of obligation, therefore an employee has to return the favor in the form of engagement. According to [Saks \(2006\)](#) another organizational antecedents is the procedural justice. When an organization fosters the sense of fairness, allocates available resources by using transparent processes, employees in turn exhibit accountability as they perform their duties. Predictably, a collaborative and supportive spirit among co-workers is essential in order engagement to be established. According to [Kahn \(1990\)](#) safety is one of the three factors that fosters engagement, therefore co-worker relations advocate safety sense while helping employees to reach their full potential in such working environment. In the same manner, fit between employees and organizational values affects positively safety because employees can safely express their values without worrying of being criticized. Finally, the leadership style that promotes team work and support enhances the feeling of safety, thus fosters employee engagement ([Kahn, 1990](#); [May et al., 2004](#)). To sum up, organizational support, fairness, collaboration among co-worker, matching employee's values with organization and supportive leadership style all these factors pave the way engagement to be cultivated within one's organization.

2.9.2 JOB ANTECEDENTS OF ENGAGEMENT

A key antecedents of engagement that was stated by [Kahn \(1990\)](#) is the significant of meaningfulness, since it enhances employee's perception that his or her job is important and worthwhile, has task variety, allows the use of different skills and provides the opportunity to make important contributions. Additionally, [May et al. \(2004\)](#) found that job enrichment was positively correlated to meaningfulness and meaningfulness mediated the relationship between job

enrichment and engagement. Finally, as it was stated earlier, employees feel obliged when they are provided with enriched and challenging jobs, thus they will response with high level of engagement for achieving desired results. In the long run, this study wants to reveal specific personality traits that are associated with engagement, thus facilitating the organizational and job characteristic antecedents to be easily established and to create an added value and competitive advantage in each organization.

2.9.3 PERSONAL ANTECEDENTS OF ENGAGEMENT

In terms of how much the Five Factor Model of personality is related to engagement so far few papers can be found in the international scientific literature. Individual personality would be deemed a personal antecedents of employee engagement as opposed to organizational and job antecedents. More specifically, one of the earliest study that can be found between specific domains of FFM (extraversion and neuroticism) and work engagement, was conducted by [Langelaan et al. \(2006\)](#) who they examined 572 Dutch employees from various organizations and professional background by using the engagement inventory of Bakker and Schaufeli's UWES, to measure engagement and Costa & McCrae's (1992) NEO to measure FFM. Research results showed work engagement is characterized by low Neuroticism in combination with high Extraversion. Likewise, [Inceoglu and Warr \(2012\)](#) found by conducting three different online studies that Emotional Stability, the antipode of Neuroticism, and Conscientiousness independently contribute positively work engagement, as workers who are engaged in their jobs tended, in dispositional terms, to be secure and stressful free, focused and goal oriented, all attributes of those specific personality traits. Additionally, a Belgian study was conducted just recently by [Janssen et al. \(2019\)](#) who they collected data from 713 Flemish workers. Personality was assessed using the Five Factor Inventory (NEO-FFI) consisted of 60 items for measuring the five domain of personality , Neuroticism, Extraversion, Openness, Conscientiousness, Agreeableness. The dependent variable of engagement was measured using the short version of UWES 9 items. Analysis of multiple linear regression showed that Conscientiousness and Extraversion were positively related to engagement, whereas high level of Neuroticism was negatively correlated with two out of three sub-domains of engagement, vigor and dedication. Furthermore, [Janssen et al. \(2009\)](#) study showed that there was no any relation between Agreeableness and Openness with engagement. At that point it is important to be mentioned that most of preceding researches were focused mainly on examining the linkages between sub-dimensions of personality and burnout,

which is the antipode of engagement as it was stated previously, demonstrated that Neuroticism was positively correlated with burnout ((*Bakker, Van Der Zee, et al., 2006; Langelaan et al., 2004; Kim et al., 2009; Maslach et al., 2001; Wollard & Shuck, 2011*). On the contrary, many studies can be found regarding other related variables of personality, apart the five main sub-domains, such as proactive personality, optimism, self- efficacy, self-esteem, resilience and demographic variables. *Bakker et al. (2012)* study shown that workers with proactive personality (a dispositional tendency to intentionally control circumstances and the related environment in order to induce meaningful changes), were more likely to craft their jobs effectively, increase job challenges and as a result increase level of work engagement. Additionally, *Xanthopoulou (2009)* also studied that personal resources such as self-efficacy, self-esteem and optimistic were all important factor for predicting employee engagement.

2.9.4 CONCLUSIONS ABOUT ANTECEDENTS

From the three main domains of antecedents that have been mentioned with regard to employee engagement it is clear that antecedents are preconditions that have to be fulfilled in order engagement to be developed. However, organization and job antecedents are based on functions and processes that have to be adopted in order engagement to be instilled. On the contrary, personal antecedents of engagement are those personality traits that will act as a contributory factor to organization's initiatives in order engagement culture to be established more effectively.

2.9.5 OUTCOMES OF EMPLOYEE ENGAGEMENT

The topic of employee engagement has garnered significant attention and much popularity because it affects positively both organizational and individual performance. The correlation between individual and organizational positive outcomes derives from the fact that engagement is an individual construct and if it impacts individual's attitudes, intentions and behaviors, identically it affects business results (*Harter et al., 2002*). The following lines show the beneficial side of engagement with regard to individual and organization.

The individual consequences of engagement refer to positive and productive job related attitudes, balance life, extra mile behavior and high productivity (*Schaufeli & Salanova, 2008; Christian et al., 2011; Halbesleben, 2010*). Engaged employees feel more committed to their

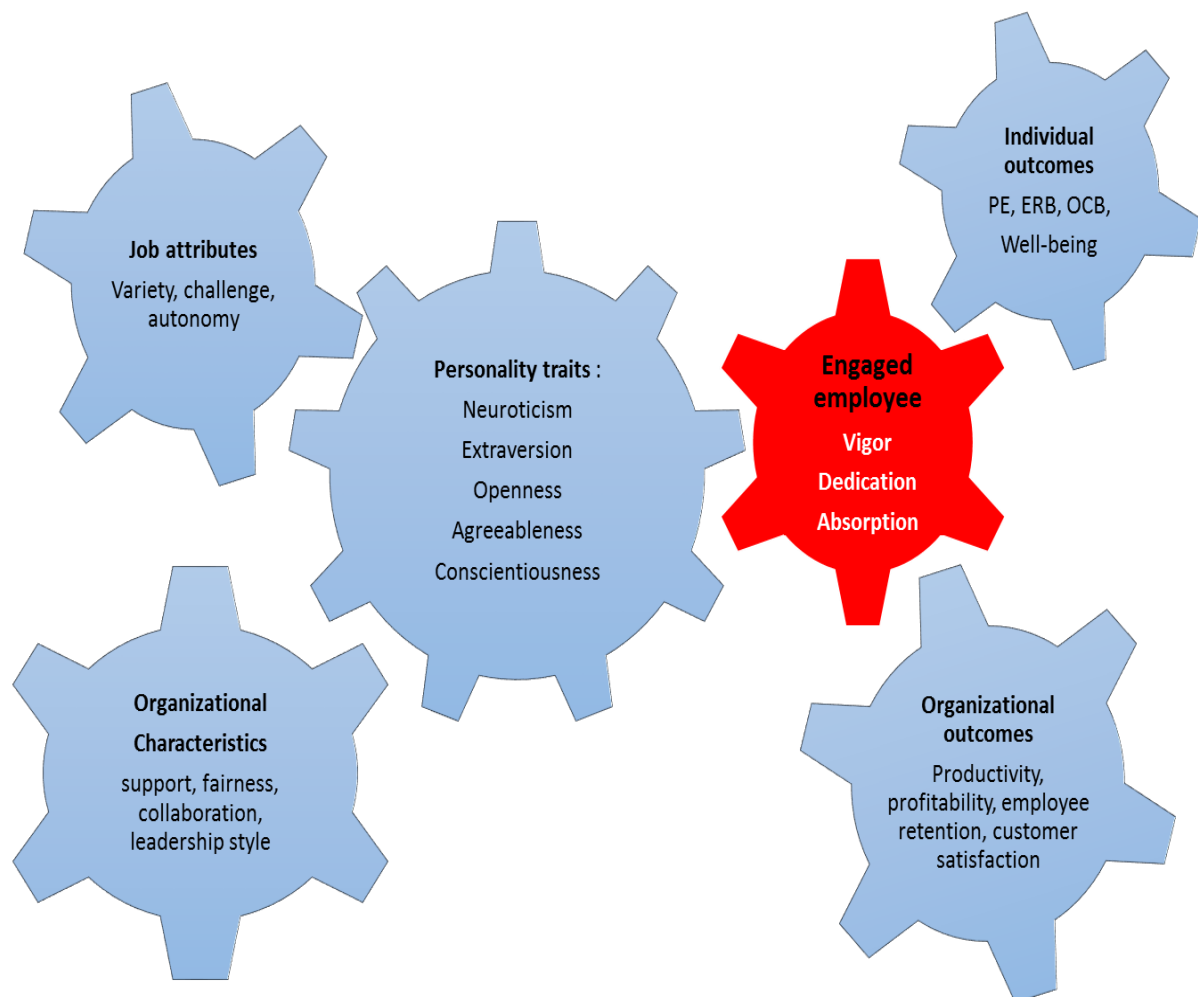
organization, are less absent and less willing to leave the organization (Yang, 2005). Also engaged employees experience positive emotions, and enjoy very good mental health. Furthermore, they exhibit more active organizational behaviors as it has been validated by the study of Dutch employees, in which engaged employees have more overtime than disengaged employees (Sonnetag, 2003). Saks (2006) conducted a research on 102 employees from different organizations and concluded that employee engagement has positive impact on organizational citizenship behavior and seems to be able and willing to exhibit discretionary effort. It goes without saying that those who are dedicated and eager going the extra mile perform better (Rich et al., 2010; Haldesleben, 2010), while they deliver better service quality, do less errors, have less occupational injuries since they absorbed to the job in hand and rated better in terms of performance from their supervisor than their less engaged employees. A meta-analysis that encompasses almost 8,000 business-units of 36 companies (Harter, Schmidt, & Hayes, 2002) highlighted that the higher the levels of engagement was the higher the business-unit performance (i.e., customer satisfaction and loyalty, profitability, productivity, turnover, and safety). This suggests that engaged workers can constitute a competitive advantage to organizations which is enormous difficult to be copied from competitors.

From the organizational perspective Harter et al. (2002) research showed that the correlation between engaged employee and employee turnover is -0.30, the correlation with customer satisfaction is 0.33 and the correlation with employee profit is 0.17. Identically, employee engagement is closely related to shareholder returns. Zhao & Sun (2010) research showed lower, medium and high employee engagement within 3 years generates 76%, 90% and 112% return on shareholders respectively. The above results prove that employee engagement is a kind of index that affects organizational performance since it is closely related with productivity, profitability, customer loyalty, employee retention, and economical security.

Finally, it can be implied that there is a closed loop between antecedents and outcomes of engagement since engagement mediates the relationship between work pre-conditions and favorable work outcomes. In other words, organizational support, procedural justice, job attributes and positive working attitudes are all strongly associated variables with positive work outcomes, therefore engagement can be considered the contributory factor in order expected initiatives to predict expected outcomes.

Figure 1 depicts how engagement framework is presented in this dissertation and the interrelationship between antecedents and outcomes.

Figure 1 Visualization of engagement construct



2.10 THE FIVE FACTOR MODEL OF PERSONALITY (FFM)

The purpose of the present study is to explore the correlation between personality traits and engagement at work. While engagement has been documented in the previous sections of this chapter, this section introduces the Five Factor Model ([McCrae, 2006](#)) and its pertinent sub-domains.

[McCrae \(2006\)](#) research tries to explain human personality by utilizing the trait theory which is defined as “relative enduring and pervasive dispositions to act, think and feel in consistent and characteristic ways” ([McCrae, 2006](#)). The aforementioned definition assumes trait stability, though some differentiations may be noticed regarding one’s psychological state, mood and emotions. Indeed, traits provide a core of consistency according to [Matthews et al. \(2003\)](#). More specifically, [McCrae & Costa \(1994\)](#) went as far as to say that personality traits change little between ages 20 to 30 but after the age of 30 are surprisingly stable. Consequently, since the trait theory exhibits stability, observation of behavioral characteristics such as ambition, enthusiasm and shyness is more preferable compared to psychoanalytic approach which focuses on examining human unconsciousness, a relative obscure and intricate process for interpreting human behavior. Hence, the trait theory gained momentum the last decades and the most adopted and researched model of it is the Five Factor Model (FFM) which has been accepted broadly by the personality research community ([Wildermuth, 2008](#)). From historical perspective the FFM model has its origin back in the 19th century when Galton used a lexicon-based approach to express individual differences in personality. In any case, the five most agreed sub-domains that better chart human personality, even though names may vary, are as follows: *Neuroticism or Need for Stability*, *Extraversion*, *Accommodation or Agreeableness*, *Conscientiousness*, *Openness or Originality*.

Need for stability ([Howard & Howard, 2001](#)) is also called Neuroticism ([McCrae & Costa, 1997](#)) while the other end of the continuum is the emotional stability ([Saucier & Goldberg, 2003](#)), has to do with individuals that exhibit stressful behavior, hostility, depression, anxiety and more generally negative emotions ([Howard & Howard, 1995](#)). Additionally, according to [Howard & Howard \(1995\)](#) those individuals who show poor resilience lacking personal happiness and consequently experience physical symptoms. While, those who are emotional stable are worry less, stay calm and are more adaptable having rational thinking in difficult situations ([Wildermuth, 2008](#)).

Extraversion represents an attitude related to positive emotions and generally characterized those persons who are sociable and tolerance to sensory stimulation (*Howard & Howard, 2001*). Additionally, extraverted individuals are often talkative and active according to *Howard & Howard* and tend to be more ambitious, cheerful and open to the outside world (*Wildermuth, 2008*). On the contrary, introverts, prefer working alone and enjoy individual tasks rather than activities that involve team work (*Howard & Howard, 1995*). *Howard and Howard (2001)* spotted a third extraversion category: that of ambiverts. These individuals' extraversion attitude lie somewhere in the middle between extraverts and introverts – they have, therefore, moderate tolerance for social interaction, are less introspective than introverts and have a moderate threshold for sensory stimulation.

Openness to experience or originality (*Costa & McCrae, 1992; Saucier & Goldberg, 2003*) refers to those individuals who tend to be creative, open-minded and generally comfort with unconventional changes, and innovative thinking (*Howard & Howard, 1995*). Those individuals who score high in originality are called explorers and tend to be curious about wider range of topics such as artistic, social and political theories and ideas. On the other end of the continuum are those who called preservers and score low in openness, while are more likely to be practical and tactical individuals having narrow interests, and focus on tested traditional methods and ideas (*Howard & Howard, 2001*).

Agreeableness or Accommodation according to *Howard & Howard (2001)* is the trait that characterized by harmony, tolerance, kindness, compliance and generally are those individuals who are friendly, cooperative and accept easily others' ideas while in this way they often promote harmony. Those who score low in Agreeableness also known as “challengers” tend to be expressive, persistent and competitive while they do not hesitate to serve their self-interests aiming to occupy power position for their own needs (*Howard & Howard, 2001*).

Finally, *Conscientiousness* according to *Costa & McCrae (19920 or Consolidation* with regard to *Howard & Howard (1995)* is the last of the five factors, are individuals who have discipline, commitment, hardworking attitude, responsibility but also inflexibility and stubbornness. Previous studies showed that this trait is related with high performance and productivity mainly due to the industriousness, responsibility and methodicalness characteristics.

The antipode of Conscientiousness it is called flexible, are those who react spontaneous having a relaxed attitude while they are capable of multitasking, able to switch easily from one task and project to another.

2.11 LITERATURE REVIEW SUMMARY

This chapter reviewed research foundational constructs, employee engagement and the Five Factor Personality model, for acquiring a deeper knowledge in order next to statistically examine the degree of interaction and correlation between of them. With regard of employee engagement, different theories and model were presented. The multi-faceted theory tries to define engagement through the lens of the favorable psychological conditions. Others support the beneficial contribution of the positive affectivity toward the work-related state of mind, an approach that is adopted by the current research as well, and further analyzed in the next chapter under the instrumentation section. Three different models stated for better understanding under which conditions engagement is established, while definition of engagement antipode was given for gaining insight across the spectrum. Conterminous facets of employee engagement were analyzed in order to argue construct uniqueness and then antecedents and consequences were classified accordingly. Finally, the other pillar of this dissertation was presented, namely the Five Factor Model and its sub-domains. The next chapter presents study design and methodology.

3. METHODOLOGY

3.1 INTRODUCTION

This chapter presents the research design and procedures that were followed in order to collect and analyze the data by utilizing specific instruments in order to address research questions.

The focus of the study is to investigate relationships between personality facets and employee engagement amongst automotive and heavy machines technicians who perform maintenance work on vehicles to keep them road-worthy and to avert major future failures. For the purpose of this study Utrecht Work Engagement Scale (UWES) ([Schaufeli, W. B., & Bakker, A., 2003](#)) was employed for measuring the engagement score and its three different facets, vigor, absorption and dedication in conjunction with the personality Workplace Big Five ProFile inventory ([Howard & Howard, 1995](#)).

3.2 DESIGN OF THE STUDY

This study used the cross-sectional quantitative research method in order to collect the required data and to explore the relationship between the *independent* variables of personality traits and descriptive characteristics, with the *dependent* variable of employee engagement. For collecting research data, onetime measurement of variables was done through specific questionnaire which was distributed in hard copy format across 10 companies from Thessaloniki region that employed service technicians. From each company I contacted the After Sales (AS) department manager for explaining him research purpose and stressing that participation was anonymous and voluntary, while all data would be reported in aggregate form. After 8 out of 10 companies had agreed to participate in the survey, I then sent an email on each manager by mentioning again survey's ethical considerations and attaching the relevant questionnaire. The manager of each company was responsible to administer the questionnaire to each participant. All participants in this survey were subordinate technical employees working with various type of machines such as commercial and private vehicles, agriculture and construction machines. For homogeneity purposes, the questionnaire was completed only from those who possessed subordinate positions in each company in order to exclude variances related to position level attributes ([Andreassen, C. S., Ursin, H., Eriksen, H. R., & Pallesen, S., 2012](#)).

3.3 INSTRUMENTS AND MEASURES

For collecting research data one questionnaire was completed by each participant. A copy of the questionnaire is included in Appendix 1. The questionnaire is consisted of three sections and all demographic questions and personality statements were translated in Greek language for being easily understood by each participant since the mother tongue of all was the Greek language. The translation was performed by two independent non-native English teachers for ensuring better results, though no meaningful differences were found between the two translated samples. On the contrary, the Greek translation for statement referring to engagement was retrieved from [Schaufeli and Bakker \(2003\)](#) manual. A pre-test of the questionnaire was sent to five technicians for examining translation comprehensibility, namely to capture their general impression on the clarity of the items, the relevance of the content to their situation and their ability to complete it on their own. After some minor syntax adjustments the questionnaire was distributed massively in hard copy format to the final recipients. Questionnaire completion time was 7 to 10 minutes.

The first of the three questionnaire sections includes four questions:

- Age
- Years of experience in this field
- Working years in the same organization
- Education level (four levels categorical question)

The second questionnaire section includes the short form of the WorkPlace Big Five ProFile (WPB5) with 48 questions which is an abridged version of the long version of 107 questions for assessing personality traits, specifically designed for the workplace. The WPB5 measures the five factors of personality such as:

- Neuroticism or Need for Stability
- Extraversion
- Openness
- Agreeableness
- Conscientiousness

All 48 questions referred to the five sub-dimensions of personality, while questions exploring each dimension were distributed unevenly throughout the inventory and alternated between positive and negative keyed questions. This practice, according to International Personality Item Pool (IPIP) organization, encourages respondents to pay closer attention to the content of each question and therefore increases the probability of valid responding. All statements were rated on a five-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree.

The below table summarizes the internal consistency of each personality sub-domains while the average Cronbach's alpha for the instrument is 0.77 ([Wildermuth, 2008](#)).

Table 1 Cronbach Alpha of WPB5

| WPB5 FACTORS (N=500) | Alpha |
|----------------------|-------|
| Neuroticism | 0.77 |
| Extraversion | 0.79 |
| Openness | 0.77 |
| Agreeableness | 0.77 |
| Conscientiousness | 0.77 |

Regarding WPB5 short version test-retest data were not provided by the author.

The third questionnaire section measures work engagement by utilizing the short version of Utrecht Work Engagement Scale of 9 questions (UWES-9) ([Schaufeli, W. B., & Bakker, A., 2003](#)). In order to avoid answering bias that might result from specific connotations related to 'work engagement' this term is not used in the title of the questionnaire. Instead, the more neutral term 'Work & Well-being Survey' is chosen ([Schaufeli, W. B., & Bakker, A., 2003, p.33](#)). The instrument is composed by three sub-dimensions: *vigor* pertains to high levels of energy and zest, the willingness to invest effort and persistence (three items, e.g., "At my work, I feel bursting with energy"), *dedication* shows the extent of engrossment from one's job, feeling delightful and proud as well as inspired and challenged (three items, e.g., "My job inspires me") and *absorption* related to the condition of being someone totally and happily immersed in one's work and forgetting everything else around (three items, e.g., "When I am working, I forget everything else around me"). All statements were rated on a seven-point Likert-type scale ranging from 0 = never to 6 = always. [Schaufeli and Bakker's \(2003\)](#) scale of the short version can be considered as one-dimensional as well as a three-dimensional construct, since the high correlations between the three dimensions and the

high internal consistency of the one dimension model validate both constructs. The below table summarizes the internal consistency of each engagement's construct deriving from 23 studies that have been conducted between 1999 and 2003 in 9 countries.

Table 2 Cronbach Alpha of UWES-9

| UWES-9 (N=12,631) | Alpha (Md) |
|--------------------------|------------|
| Vigor | 0.84 |
| Dedication | 0.89 |
| Absorption | 0.79 |
| Engagement (total score) | 0.93 |

As far as test-retest reliability there are two longitudinal studies included in the international database which according to them the stability of the UWES across time was assessed. The UWES was administered twice with an interval of one year among 293 Australian Salvation Army officers and among 563 Norwegian paramedics. The stability coefficients (rt) are shown in the below table.

Table 3 Stability Coefficients of UWES-9

| UWES-9 | Salvation Army (N=293) | Paramedics (N= 563) |
|--------------------------|------------------------|---------------------|
| Vigor | 0.61 | 0.71 |
| Dedication | 0.56 | 0.66 |
| Absorption | 0.57 | 0.63 |
| Engagement (total score) | 0.64 | 0.73 |

3.4 DATA ANALYSIS

After questionnaires were collected, I imported data into SPSS software version 23 to perform the statistical analysis tests at an alpha level of 0.05 and 0.01. The following table summarizes the steps that were done for the statistical analysis.

Table 4 Data Analysis Summary

| Data Process | Data Analysis |
|--|--|
| Missing Data | Inspection for missing values |
| WPB5-48/ UWES-9 transforming nominal answers into numeric | SPSS Transform feature |
| WPB5-48/ UWES-9 items | Labelled consistently |
| Calculating UWES-9 and sub-domains means | SPSS Calculate feature means |
| WPB5-48 recoding negative direction items | Recode command |
| Calculating WPB5-48 score for each factor | SPSS Calculate five raw scores |
| Converting row scores into standardized | Divide actual raw score with maximum raw score |
| Testing WPB5 & UWES for outliers | SPSS Explore feature plots |
| Demographic description | SPSS Descriptive feature |
| Research Questions | Data Analysis |
| What is the correlation between personality factors and engagement? | Person correlations |
| What personality factors best predict engagement? | Multiple regressions |
| What are the differences in engagement across each personality continuum? | One-way Anova |
| What are the differences in engagement across descriptive characteristics? | Factorial Anova |

3.5 SUMMARY

This chapter presented the study population and research design, questionnaires collection, instrumentation and data analysis methods. The next chapter describes in detail data analysis and results that are related to research questions.

4. ANALYSIS OF RESULTS

This chapter describes descriptive characteristic of the sample, explains how the data were prepared for analysis, and details the statistical tests that were conducted in order to give answer to each research question. As it was mentioned in the previous chapter data were analyzed using the SPSS statistical program version 23.

4.1 QUESTIONNAIRE REGISTRATION AND PREPARATION

Questionnaires were sent by email to 8 AS managers of different companies and then each questionnaire was distributed to each technician in hard copy format to be completed accordingly. As it was previously mentioned, the questionnaire was delivered only to subordinate staff, excluding foremen and supervisors. At that point it is worth mentioning that all AS managers are known persons to me since with most of them I have collaborated in the past on various matters related to our activities. The next step included questionnaire collection and screening for missing data. From the total population only 6 questionnaires were found with missing data since participants did not answer some personality and engagement questions and 1 questionnaire had all its answers in 'neutral' range, thus all of them were excluded. Additionally, it is worth mentioning that there were 12 technicians that refused to participate in the survey. Therefore, from 76 collected questionnaires the valid percentage were 90%, namely 69 responders contributed to this research.

The following table summarizes the number of questionnaires that were collected - population size- from each company and the number of questionnaires that were excluded due to inappropriate completion.

Table 5 Population & Sample size

| No. | Company Registration Code | No. of Q. per company | Excluded Q. |
|--------------|------------------------------|--------------------------|-------------|
| 1 | C | 20 | - |
| 2 | G | 8 | - |
| 3 | A | 10 | - |
| 4 | V | 8 | -2 |
| 5 | K | 8 | - |
| 6 | E | 5 | -2 |
| 7 | M | 6 | - |
| 8 | F | 11 | -3 |
| Total | | 76 | 69 |

4.2 ENTERING DATA IN SPSS

This section describes the processes that were followed in order to enter the raw data into SPSS, then preliminary calculations and test assumptions for running next the relevant statistical models.

The first questionnaire section consisted of four descriptive questions. The answers regarding *age*, *years of experience* and *tenure* were entered into SPSS as a raw value without classified them into scale. On the contrary, the answers regarding the fourth question about *education level* were converted into numerical, ranging from 1 to 4 for each level.

Next, the third and fourth sections of the questionnaire included Likert scale questions. The group of personality questions was in 5-point Likert scale, while questions regarding employee engagement was in 6-point Likert scale. Into SPSS was registered the numerical value which represented the degree that someone's agreed with each statement, while each numerical value, through SPSS 'Transform' feature, was assigned with nominal answer such as 'strongly disagree=1' to 'strongly agree=5'.

The following step concerned the calculation of engagement score for each participants by using SPSS ‘Compute’ feature. The general engagement score was the composed score of the three sub-dimensions of engagement which each of them was consisted of three questions. Therefore every mean score of each sub-dimension of engagement, namely vigor, dedication and absorption, was registered separately.

Next, I calculated the scores for each of the five personality dimensions - namely Conscientiousness, Openness, Neuroticism, Agreeableness, and Extraversion – corresponded to each participant. In order to compute personality trait scores I first recoded negative directions answers. For instance, question 8 “Prefers implementing plans to thinking them up” refers to the Openness dimension and has a negative direction, namely a ‘strongly agree= 5’ answer gives score 1 in Openness, since whoever scores high in this question is considered Preserver, the opposite end of Openness. Therefore, following [Howard & Howard \(1995\)](#) questions classification into positive and negative, the reversion process was executed through the ‘Recode into different Variable’ feature of SPSS.

Then, I added the score of the questions that belonged to the same personality dimension in order to formulate the raw score for each of the Five Factor of Personality. This gave five personality scores for each respondent. Then I computed the standardized score given that there are different number of questions for each personality dimension. Therefore all raw scores were converted into standardized by dividing the raw score with the maximum score that someone’s can achieve and multiplying by 100. From now on, all personality scores correspond to standardized scores.

4.3 IDENTIFYING OUTLIERS & DEMOGRAPHIC DESCRIPTION

In order to identifying responders’ scores that can influence final results, I run the ‘Explore’ feature in SPSS for both the dependent and independent variables. Regarding the independent variables of Five Factor of Personality, a box plot was generated for each of the five factors. A total of seven (7) cases were eliminated due to outliers. Similar process was followed for the three facets of engagement and the general engagement score. Two (2) more cases were eliminated. A total of 60 responses remained. Appendix 2 shows the box plots for personality and engagement with the

respective outliers. The following table shows means, standard deviations, highest and lowest values for each variable.

Table 6 Descriptive Statistics

| Variables | N | Minimum | Maximum | Mean | Std. Deviation |
|------------------------|----------|----------------|----------------|-------------|-----------------------|
| AGE | 60 | 18 | 55 | 37,68 | 10,01 |
| EDUCATION LEVEL | 60 | 1 | 3 | 2,08 | ,671 |
| MEAN ABSORPTION | 60 | 2,00 | 6,00 | 4,59 | 1,07 |
| MEAN DEDICATION | 60 | 3,00 | 6,00 | 5,09 | ,92 |
| MEAN ENGAGEMENT | 60 | 2,56 | 6,00 | 4,73 | ,89 |
| MEAN VIGOR | 60 | 1,67 | 6,00 | 4,45 | 1,03 |
| STANDAGREEABLENESS | 60 | 38 | 69 | 54,56 | 8,15 |
| STANDCONSCIENTIOUSNESS | 60 | 62 | 100 | 83,80 | 9,48 |
| STANDEXTRAVERSION | 60 | 53 | 85 | 68,24 | 7,15 |
| STANDNEUROTICISM | 60 | 29 | 71 | 48,96 | 10,46 |
| STANDOPENNESS | 60 | 51 | 73 | 62,81 | 5,99 |
| W.Y. INCOMPANY | 60 | 0 | 30 | 10,13 | 9,25 |
| Y.OF EXPERIENCE | 60 | 0 | 39 | 17,17 | 10,90 |
| Valid N (listwise) | 60 | | | | |

Participant ages varied between 18 and 55 years, with a mean of 37,7 and SD of 10 showing the increased need for young employees, especially the last decade, since they are more capable to follow all these technological advancements. The interesting thing was that participants had on average 17 years of experience and 10 years in the same company.

4.4 STATISTICAL ANALYSIS OF RESEARCH QUESTIONS

The next part of this chapter provides answers to each research question by conduction a specific statistical analysis.

4.4.1 RESEARCH QUESTION 1

The *first question* of this study examines the tendency between the five personality dimensions and the engagement by running a Pearson Correlation coefficient analysis. This method attempts to capture the association between the independent variables of personality with each of dependent variable related to engagement. Therefore, a coefficient r indicates a positive association between variables when it takes values greater than 0 while values less than 0 indicates negative association. A value closer to 0 indicates no significant correlation between the variables. The following table summarizes Pearson Correlation results.

Table 7 Pearson Correlations between Personality traits and Engagement with all its Facets

| VARIABLES | | VIGOR | DEDICATION | ADSORPTION | ENGAGEMENT | NEUROTICISM | EXTRAVERSION | OPENNESS | AGREEABLENESS | CONSCIENTIOUSNESS |
|-------------------|---------------------|--------|------------|------------|------------|-------------|--------------|----------|---------------|-------------------|
| VIGOR | Pearson Correlation | 1 | ,536** | ,551** | ,719** | -,188 | ,336** | ,154 | -,270* | ,319* |
| | Sig. (2-tailed) | | ,000 | ,000 | ,000 | ,151 | ,009 | ,240 | ,037 | ,013 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| DEDICATION | Pearson Correlation | ,536** | 1 | ,802** | ,902** | -,216 | ,279* | ,263* | -,226 | ,539** |
| | Sig. (2-tailed) | ,000 | | ,000 | ,000 | ,098 | ,031 | ,042 | ,082 | ,000 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| ADSORPTION | Pearson Correlation | ,551** | ,802** | 1 | ,927** | -,115 | ,301* | ,286* | -,316* | ,495** |
| | Sig. (2-tailed) | ,000 | ,000 | | ,000 | ,382 | ,020 | ,026 | ,014 | ,000 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| ENGAGEMENT | Pearson Correlation | ,719** | ,902** | ,927** | 1 | -,170 | ,329* | ,273* | -,298* | ,544** |
| | Sig. (2-tailed) | ,000 | ,000 | ,000 | | ,194 | ,010 | ,035 | ,021 | ,000 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| NEUROTICISM | Pearson Correlation | -,188 | -,216 | -,115 | -,170 | 1 | -,307* | -,259* | -,043 | -,159 |
| | Sig. (2-tailed) | ,151 | ,098 | ,382 | ,194 | | ,017 | ,045 | ,743 | ,224 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| EXTRAVERSION | Pearson Correlation | ,336** | ,279* | ,301* | ,329* | -,307* | 1 | ,191 | -,162 | ,418** |
| | Sig. (2-tailed) | ,009 | ,031 | ,020 | ,010 | ,017 | | ,144 | ,218 | ,001 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| OPENNESS | Pearson Correlation | ,154 | ,263* | ,286* | ,273* | -,259* | ,191 | 1 | -,169 | ,190 |
| | Sig. (2-tailed) | ,240 | ,042 | ,026 | ,035 | ,045 | ,144 | | ,197 | ,146 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| AGREEABLENESS | Pearson Correlation | -,270* | -,226 | -,316* | -,298* | -,043 | -,162 | -,169 | 1 | -,230 |
| | Sig. (2-tailed) | ,037 | ,082 | ,014 | ,021 | ,743 | ,218 | ,197 | | ,077 |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| CONSCIENTIOUSNESS | Pearson Correlation | ,319* | ,539** | ,495** | ,544** | -,159 | ,418** | ,190 | -,230 | 1 |
| | Sig. (2-tailed) | ,013 | ,000 | ,000 | ,000 | ,224 | ,001 | ,146 | ,077 | |
| | N | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

According to the above table we have the following results:

- 1) There was not a significant correlation between Neuroticism and engagement, $r(60) = -0,17$, $p > 0,05$.
- 2) There was a statistically significant correlation between Extraversion and engagement, $r(60) = 0,33$, $p < 0,05$.
- 3) Correlation between Openness and engagement was statistically significant, $r(60) = 0,27$, $p < 0,05$.
- 4) Between Agreeableness and engagement there was a statistically significant correlation, $r(60) = -0,29$, $p < 0,05$.
- 5) The relationship between Conscientiousness and engagement was strongly significant, $r(60) = 0,54$, $p < 0,01$.

Pearson correlation results showed significant correlation between four personality traits and engagement: Extraversion, Openness, Agreeableness and Conscientiousness with coefficient $r = 0,33$, $r = 0,27$, $r = -0,30$, $r = 0,54$ respectively.

Given the three hypotheses in chapter 1 section 'STUDY QUESTIONS' and taking into account correlation results, H1 and H3 was accepted while H2 was rejected.

Additionally, a closer look at the results revealed significant correlation between Extraversion and Vigor with $r = 0,33$ while the change to observe this value through random error alone is only 0,9%. Similarly, correlation between Conscientiousness, dedication and adsorption is highly significant with zero random error.

4.4.2 RESEARCH QUESTION 2

The *second question* of this study examines the personality traits/ factors that best predict employee engagement. Therefore, through inferential statistics, this test examines to what extent the combination of independent variables, namely Conscientiousness, Extraversion, Openness, Agreeableness and Neuroticism, can forecast employee engagement and its three sub-dimensions as well. For formally testing the magnitude of the relationship between predictor variables and outcomes, a 'Forward' multiple regression method was utilized.

Additionally, the regression test further examines the contribution of these predictor variables towards each sub-dimension of engagement, namely vigor, dedication and absorption.

Before running the regression analysis, multivariate normality and linearity of dependent variable has to be tested (*Landau, S., & Everitt, B. S., 2003*). In order to assess engagement distribution for normality and given that outliers had be eliminated from the sample, I used SPSS ‘Explore’ feature to visually check the Q-Q plot of engagement (see Appendix 3). The Q-Q plot diagram showed that observations were hanging across the line, therefore normality could then be assumed. Though, the sample suffers from sufficient observations, something that Shapiro-Wilk method is confirmed, since the significant value of $p = 0,012$ is less that the cut out value of 0,05, therefore the null hypothesis of normal distribution according to that method is downplayed (see Appendix 3). Next, through the configuration of the ‘Forward’ regression on SPSS a scatterplot of standardized predicted values by standardized residuals values was generated (see Appendix 4). The diagram validates a linear relationship between the variables, since the results shape a conceivable rectangular.

Since the basic assumption of normality and linearity were met, results from the ‘Forward’ regression analysis are presented in the following tables.

Table 8 Regression Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|--------|-------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| CONSC. | ,544a | ,296 | ,283 | ,75482 | ,296 | 24,332 | 1 | 58 | ,000 |

a. Predictors: (Constant), CONSCIENTIOUSNESS

b. Dependent Variable: ENGAGEMENT

Table 9 Regression Coefficients^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | | |
| 1 (Constant) | ,457 | ,874 | | ,523 | ,603 |
| CONSCIENTIOUSNESS | ,051 | ,010 | ,544 | 4,933 | ,000 |

a. Dependent Variable:ENGAGEMENT

Following the ‘Forward’ regression method the model starts empty and then loads every time each predictor that satisfies the entering criterion of $p=0,05$ and the running process stops when each of the predictors have been examined for inclusion or exclusion in regard to the p value. In my test I used the default excluded criterion of $p>0,1$. Regression results indicated an overall model of one independent variable -Conscientiousness- that significantly predicts engagement since the variance of engagement depends at 28% from Conscientiousness, $R^2_{adj}= 0,283$, $F(1,58)= 24,32$, $p<0,001$. Additionally, the coefficient table reveals that Unstandardized Coefficient $B=0,051$, $p<0,001$ means that for one unit increase of Conscientiousness engagement increases by 0,051, while if engagement score is converted in the same standardized scale as the independent variable - in the descriptive table engagement is listed in the scale of 0 to 6 - the increase in engagement is contributed by 0,85. Finally, the Standardized Coefficient of $b=0,54$, $p<0,001$ reveals that for every one standard deviation added to Conscientiousness we get 0,54 standard deviation increase in engagement.

A summary of regression models for each of the engagement dimension are presented in the following table.

Table 10 Regression Model 1,2,3 Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|----------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | ,336 ^a | ,113 | ,098 | ,98226 | ,113 | 7,404 | 1 | 58 | ,009 |
| 2 | ,539 ^a | ,291 | ,279 | ,78721 | ,291 | 23,793 | 1 | 58 | ,000 |
| 3 | ,495 ^a | ,245 | ,232 | ,93792 | ,245 | 18,817 | 1 | 58 | ,000 |

Model 1

a. Predictors: (Constant), **EXTRAVERSION**

b. Dependent Variable: **VIGOR**

Model 2

a. Predictors: (Constant), **CONSCIENTIOUSNESS**

b. Dependent Variable: **DEDICATION**

Model 3

a. Predictors: (Constant), **CONSCIENTIOUSNESS**

b. Dependent Variable: **ABSORPTION**

One predictor was found for each of the engagement facets. It was anticipated the relationship between vigor and Extraversion which accounts for 10% of the variance in vigor with Standardized Coefficient of $b=0,33$, $p<0,009$. The rest two models were in line with the general engagement model.

4.4.3 RESEARCH QUESTION 3

The *third question* of this study measures differences in engagement across each personality continuum, namely how engagement varies across each personality traits. In this case, through one-way ANOVAS this study explores differences between engagement standardized score, as dependent variable, across the categorized score of each personality trait, as an independent variable.

According to IPIP organization in order to run the one-way ANOVA the standardized score of each personality factor has to be categorized into 5 equal parts, which are called quantiles. The labels for each personality factor range from low, somewhat low, average, somewhat high and high. The below table shows participants distribution in each personality category.

Table 11 Participants Distribution per each Personality Category

| STAND. Pers.Factors | LOW (1) | SOM. LOW (2) | AVERAGE (3) | SOM. HIGH (4) | HIGH (5) |
|---------------------|---------|--------------|-------------|---------------|----------|
| | N | N | N | N | N |
| NEUROTICISM | | 12 | 39 | 9 | |
| EXTRAVERSION | | | 5 | 53 | 2 |
| AGREEABLENESS | | 5 | 43 | 12 | |
| OPENNESS | | | 21 | 39 | |
| CONSCIENTIOUSNESS | | | | 24 | 36 |

Looking the above table, the normality for one-way ANOVA test was compromised even more by the categorized process. Although, one-way analyses of variance are robust enough to withstand deviations in normality, though the insufficient distribution among Openness and Conscientiousness annuls the ANOVA method to be implemented on these specific traits. For analyzing engagement's distribution across the remaining three personality traits, Neuroticism, Extraversion and Agreeableness, Post Hoc Tukey tests were run. ANOVA results for Neuroticism and Extraversion were not statistically significant with $F(2,57)= 0,35$, $p=0,7$ and $F(2,57)=0,51$,

$p=0,60$ respectively. Only Agreeableness met the condition of significance with the results of one-way ANOVA and Turkey test to be summarized in the following table.

Table 12 ANOVA Agreeableness and Engagement

| AGREEABLENESS | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|-------|------|
| Between Groups | 1310,999 | 2 | 655,499 | 3,188 | ,04 |
| Within Groups | 11719,351 | 57 | 205,603 | | |
| Total | 13030,350 | 59 | | | |

Table 13 ANOVA Multiple Comparisons

Dependent Variable: ENGAGEMENT

Independent Variable: AGREEABLENESS

| CATEGORIES (I) (J) | | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|-----------------------|---|-----------------------|------------|------|-------------------------|-------------|
| | | | | | Lower Bound | Upper Bound |
| 2 | 3 | 9,74160 | 6,77510 | ,329 | -6,5621 | 26,0453 |
| | 4 | 18,33333 | 7,63244 | ,050 | -,0335 | 36,7002 |
| 3 | 2 | -9,74160 | 6,77510 | ,329 | -26,0453 | 6,5621 |
| | 4 | 8,59173 | 4,68135 | ,167 | -2,6735 | 19,8570 |
| 4 | 2 | -18,33333 | 7,63244 | ,050 | -36,7002 | ,0335 |
| | 3 | -8,59173 | 4,68135 | ,167 | -19,8570 | 2,6735 |

Table 14 ANOVA Homogeneous Subsets

| Agreeableness | N | Subset for alpha = 0.05 | |
|---------------|----|-------------------------|---------|
| | | 1 | 2 |
| 4,00 | 12 | 71,2963 | |
| 3,00 | 43 | 79,8880 | 79,8880 |
| 2,00 | 5 | | 89,6296 |
| Sig. | | ,387 | ,297 |

The above table revealed a significant differences between two level of Agreeableness and engagement. More specifically, ANOVA results were $F(2,57)= 3,18$, $p=0,04$, while significant variation of engagement there is between category 2 and 4 where engagement mean varies from 89,62 to 71,29 respectively. Consequently, given the homogeneous subset table, engagement is

higher on those that score low in Agreeableness, namely to the other end of the continuum which is called Challenger with a marginal significance of $p=0,05$.

4.4.4 RESEARCH QUESTION 4

The *fourth question* of this study examines to what extend research descriptive characteristics affect employee engagement. For this purpose, Pearson correlation coefficients was run by loading on the analysis three descriptive variables, namely age, years of experience and tenure in the same company in order to assess the degree of significance with the engagement. Then, ANOVA was run between the four categorical variable of education and engagement for examining the extent of engagement variance.

The following table summarizes Pearson correlation results.

Table 15 Correlations between Descriptive characteristics and Engagement

| VARIABLES | | AGE | YOEXPERIENCE | WYINCOMPANY | ENGAGEMENT |
|--|---------------------|------|--------------|-------------|------------|
| ENGAGEMENT | Pearson Correlation | ,228 | ,298* | ,100 | 1 |
| | Sig. (2-tailed) | ,079 | ,021 | ,445 | |
| | N | 60 | 60 | 60 | 60 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | |
| *. Correlation is significant at the 0.05 level (2-tailed). | | | | | |

Results indicated that the only significant positive relationship exists between *years of experience* and engagement, $r(60)= 0,30$, $p=0,02$.

The distribution for the different levels of education is showed in the following table.

Table 16 Educational distribution

| EDUCATION CATEGORIES | N | Mean | Std. Deviation | Std. Error | Minimum | Maximum |
|----------------------|----|---------|----------------|------------|---------|---------|
| BASIC EDUCATION | 11 | 79,1246 | 14,15403 | 4,26760 | 57,41 | 100,00 |
| VOCATIONAL SCHOOL | 33 | 82,6599 | 14,07147 | 2,44953 | 50,00 | 100,00 |
| BACHELOR DEGREE | 16 | 71,2963 | 14,83024 | 3,70756 | 42,59 | 94,44 |
| Total | 60 | 78,9815 | 14,86114 | 1,91856 | 42,59 | 100,00 |

None of the participants scored on the fourth level of master degree.

ANOVA results revealed a significance of $F(2,57) = 3,40$, $p = 0,04$ while Post Hoc test captured higher level of engagement for participants with vocational education compared those with bachelor degree, 82,69 and 71,30 respectively, at significance of $p = 0,03$.

4.5 SUMMARY

Totally, 76 questionnaires were gathered from 8 companies that accepted to participate in the survey. After the screening process for missing data 90% was accepted, namely 69 questionnaires from which 9 more were eliminated due to extreme scores.

Question 1 was answered by running Pearson correlation revealing strong positive relationship between Conscientiousness and engagement, while Extraversion and Openness were positive correlated to a lesser degree and Agreeableness was negatively correlated.

For answering question 2 regression analysis was run which uncovered the soundest predictor of personality. The only contributory trait that accounts at a rate of 28% on engagement variance was Conscientiousness.

Research question 3 was negatively affected by the poor sample resulting in uneven dispersion of responders among the different categories. Only Agreeableness was able to provide statistically significant results showing that low level of Agreeableness attributed to higher level of engagement.

Finally, question 4 indicated, through Person analysis, the significant relationship between year of experience and engagement, while one-way ANOVA showed that there is a marginal disposition between someone's who has technical education background and may demonstrate higher level of engagement.

The next chapter refers to results overview, conclusions, limitations and recommendations for further research.

5. RESULTS OVERVIEW, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 RESULTS OVERVIEW

The aim of this study was to capture the personality side of employee engagement on a specific group of professionals. Given that personality traits are inherent and fairly stable and influence the way people react to most situations, therefore personality could be considered the cornerstone of an individual to be engaged or disengaged at work.

The results of the study showed that Conscientiousness is the most prominent trait pertaining to employee engagement and its three dimensions (vigor, dedication, absorption). First, a Person correlation analysis found strong positive correlation between Conscientiousness and engagement, $r = 0,54$. Secondly, through regression analysis, Conscientiousness was the only personality variable accounting significantly at a rate of 28% in engagement variance. Though, the third ANOVA analysis could not reveal the extent of engagement variance across the Conscientiousness spectrum, predominately due to the poor dispersion across the five categories. Based on the results, it can be implied that employees high in Conscientiousness are characterized by high industrious attitude, methodicalness and firmness and therefore are more likely to actively involved in their job, accomplish their task and eventually exhibit an optimal professionalism. This finding is in agreement with previous studies showing that Conscientiousness has a strong relationship with job performance and stimulus individual's internal motivational process for goals fulfillment (Kim, H. J., Shin, K. H., & Swanger, N., 2009; Janssens et al., 2019). Subsequently, employee with a great amount of Conscientiousness are described to be mainly dedicated to their job, to be totally adsorbed by it and to be striving to achieve their goals (McCrae, R. R., & Costa, P. T., 1997).

Given that previous studies showed Neuroticism to be significantly correlated with engagement, I expected similar results for this research as well (Kim, H. J., Shin, K. H., & Swanger, N., 2009; Inceoglu, I., & Warr, P., 2011). Though, these findings were not confirmed, since correlation results did not identify Neuroticism to be an important factor in the relationship with engagement. However, according to Person results, Neuroticism has negative correlation, $r = -17$, implying that an employee with high level of Neuroticism more likely to experience negative

emotions, such as stress, fear and frustration. Given the fact that engagement is defined as a positive work-related state of mind, it is assumed that an individual who has the predisposition to experience positive emotions, opposite to Neuroticism, is more likely to be engaged.

With regard to Extraversion, Pearson correlation indicated positive relationship with engagement. Although, Extraversion trait did not contribute to engagement prediction on any of the other tests, it is deemed that the positive significant relationship is explained to a large extent by the open, energetic and positive nature of this personality traits that it is highly related to vigor (*Bakker AB, Schaufeli WB, Leiter MP, et al., 2008*).

The most intriguing finding, however, was related to Agreeableness having negative correlation with engagement ($r=-0.30$). On top of that, one-way ANOVA showed that highest engagement mean were found in the low Agreeableness level. Individuals with low level in Agreeableness are challenging, eager to express their opinion, comfortable to show off their competencies, ambition, and risk-taking (*Howard & Howard, 1995*). The reason for this surprising result is opposed to previous studies and therefore causalities are sought later in this chapter in the context of this specific work environment.

Additionally, as for Openness, only the Pearson correlation analysis demonstrated a positive correlation of $r= 0.27$, $p< 0.05$ while vigor did not manage to be an influential factor for Openness result due to no statistically significant $p< 0.2$. Consequently, the connection between Openness and engagement can be questioned and in any case previous studies showed that Openness was not an eminent factor of engagement.

Lastly, in the context of the demographic analysis, a marginal relationship between years of experience and engagement was underlined with the help of Pearson correlation $r= 0.30$, $p< 0.05$. The extent of significance between these two variables should be tested further based on a bigger sample.

5.2 PRACTICAL IMPLICATIONS

Nowadays, the broad advent of technological means in each occupational sector and the massive adoption of all these innovative features to a moderate or large extent by many organizations worldwide have ceased them to be comprised a competitive edge, on the contrary what can be deemed as the most compelling advantage of a company is the degree of workforce engagement. Leaders and managers based on the noteworthy contribution of this research should consider at recruitment level, at organization motivational level and at personal level how to establish and foster a culture of engagement.

At recruitment level, the findings of the present study revealed that personality matters with respect to engagement at work. More specifically, those technicians who are conscientious, namely focused, concentrated, organized and well-planned have a strong edge against other who exhibits different traits. Indeed, having served the After Sales sector for 22 years in different managerial positions one thing cannot be question from the practical perspective, the compelling contribution of all characteristics that are encompassed by conscientiousness such as perfectionism, organized, result-driven, concentrated and methodical (*Howard & Howard, 1995*). All the aforementioned characteristics are exactly what each technicians need to have in order to get the job done at specific time for being this job payable, since the excess time for investigating a failure or repairing it, it will not be paid according to how many man-hours have been lost if it is more that the market can justify. In other words, the profit from such professional activity comes, to a large extent, from how accurate and fast a technician can fix a failure, that's why conscientiousness highly matters. Additionally, the current research illustrated the high correlation of the three sub-dimensions of engagement with conscientiousness, because vigor is directly related to industriousness, dedication with strong will to achieve results and adsorption with concentration and methodicalness.

At organization level managers and recruiters can develop techniques, based on study results, in order to trigger changes that may boost engagement with regard to different personality traits. For instance, according to the third research question, low Agreeableness score drives to higher engagement score. Therefore, technicians low in Agreeableness, according to Howard & Howard, are often comfort at expressing themselves and their needs, asking for recognition, dealing with conflict and are persistent and competitive. Low Agreeableness, consequently, may not create engagement but it may help create the conditions in order engagement to take place.

Thus, astute managers may use low Agreeableness technicians as informants in order to promote improvements that may enhance the engagement of all employees in these departments. Similarly, managers should create a working environment that promote team building, relationship among employees and enthusiasm since these features facilitate extravert attitudes and in turn this generate a more engaging environment as Pearson correlation result from this research supports. Finally, in the context of organizational initiatives, training programmed can be developed to foster employees' attributes pertaining to conscientiousness or to address aspects that are related to low conscientiousness such as low responsibility, unorganized and less result oriented.

Lastly, at personal level, it is always useful to know where we stand, what are our weaknesses and strengths in order to better assess what challenges and constraints we have to overcome for reaching higher engagement level. For instance, a technician cannot deliver expected results in due time unless he manage to eliminate unproductive repeated activities with no added value.

The next section highlights some limitations that may impact study results and therefore should be cautiously considered.

5.3 LIMITATIONS, RECOMMENDATIONS

It goes without saying that the sample size is the first and foremost reason that hinders to extrapolate the conclusions of the current study, therefore a future study with a bigger sample may further investigate the extent in which personality traits impact employee engagement.

Another limitation is the type of the study, followed the cross-sectional method against the longitudinal, predominantly due to the restricted time for conducting the research. Thus, data captured at a specific point in time may lack accuracy, especially the consistency of the engagement variable was not traced across the time.

Moreover, self-reports and self-evaluation research through questionnaires may include the risk of social desirable answers. The high mean of engagement, was 4,73 out of 6, together with the high score in Conscientiousness (small dispersion across the continuum) reveals that the common driver for those results stem from social desirability bias. It happens when certain attributes are socially valued and therefore respondents emphasize or exaggerate when answering these specific survey questions. With regard to this questionnaire one solution may be to reverse some engagement questions so that the social desirable responses to be less obvious. Additionally, questions related to the opposite end of Conscientiousness should be restated in a way to not only

illustrate negative aspects but also positive one, for instance the multi-tasking and parallel activities are positive attributes of the other end of Conscientiousness that were not included in any personality statement. Finally, another reason that attributed to social desirable answers was the fact that questionnaires were distributed to the technicians by their supervisors. Thus, and despite the fact that emphasis was given on confidentiality, this process may have contributed respondents to answer with greater bias.

Finally, besides personality, a more holistic approach for examining engagement construct should include other attributes that contribute to the establishment of engagement. Thus, other antecedents could impact to a large extent the engagement such as job and organizational antecedents as presented in Chapter 2. A solution for a more holistic examination of engagement could be achieved by including antecedent questions in addition to personality and demographic characteristics.

5.4 CONCLUSION

We live in a world that is constantly changing and becoming more volatile, uncertain, complex and ambiguous. Under these circumstances leaders and managers should embrace fresh approaches to guarantee positive results for their organizations. In this frame of reference the best stronghold against these asymmetric threats is the accomplishment of advantages that cannot be imitated by competitors. This study shed light on how naturally engaged employees can be traced, considering engagement a fundamental asset of differentiation (*Shuck, B., & Wollard, K., 2010*) that can advance both productivity and profit. However, the full potential of antecedents and consequences of employee engagement has not been conceptualized yet. Just recently, scholars and practitioners have drawn their attention in an effort to better define the theoretical framework and understand practical implications (*Brief AP, Weiss HM., 2002*). While, the engagement construct is new and complex, it is widely accepted that changing price and product is easy but it is another thing to instill an engaged attitude to the workforce.

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APPENTIX 1 QUESTIONNAIRE

Η παρούσα έρευνα έχει στόχο να εξετάσει την συσχέτιση της προσωπικότητας των τεχνιτών/μηχανικών όλων των ειδών μηχανημάτων/οχημάτων σε σχέση με την εργασιακή προσήλωση. Παρακαλώ να αφιερώσετε λίγα λεπτά από το χρόνο σας για τη συμπλήρωση του παρακάτω ερωτηματολογίου, με την επισήμανση ότι θα πρέπει να απαντήσετε με ειλικρίνεια όλες τις ερωτήσεις, λαμβάνοντας υπόψη ότι δεν υπάρχουν σωστές ή λανθασμένες απαντήσεις. Οι απαντήσεις σας είναι ανώνυμες και εμπιστευτικές. Σας παρακαλώ να διαβάσετε κάθε πρόταση προσεκτικά και να δηλώσετε τον βαθμό που συμφωνείτε ή διαφωνείτε.

Σας ευχαριστώ για την συνεργασία σας.

ΔΗΜΟΓΡΑΦΙΚΑ ΣΤΟΙΧΕΙΑ

ΗΛΙΚΙΑ

ΠΟΣΑ ΧΡΟΝΙΑ ΕΡΓΑΣΙΑΚΗΣ ΕΜΠΕΙΡΙΑΣ ΕΧΕΤΕ; (κάτω από 1 χρόνο σημειώστε 0)

ΠΟΣΑ ΧΡΟΝΙΑ ΕΡΓΑΖΕΣΤΕ ΣΤΗΝ ΠΑΡΟΥΣΑ ΕΤΑΙΡΙΑ; (κάτω από 1 χρόνο σημειώστε 0)

Παρακαλώ συμπληρώστε τα παρακάτω στοιχεία βάζοντας ένα (x) στο αντίστοιχο τετραγωνάκι.

**ΠΟΙΟ ΕΙΝΑΙ ΤΟ
ΑΝΩΤΕΡΟ ΕΠΙΠΕΔΟ
ΕΚΠΑΙΔΕΥΣΗΣ ΠΟΥ
ΕΧΕΤΕ
ΟΛΟΚΛΗΡΩΣΕΙ;**

Απόφοιτος Γυμνασίου/Λυκείου

Απόφοιτος Τεχνικής Σχολής- ΙΕΚ

Απόφοιτος ΤΕΙ / ΑΕΙ

Κάτοχος Μεταπτυχιακού

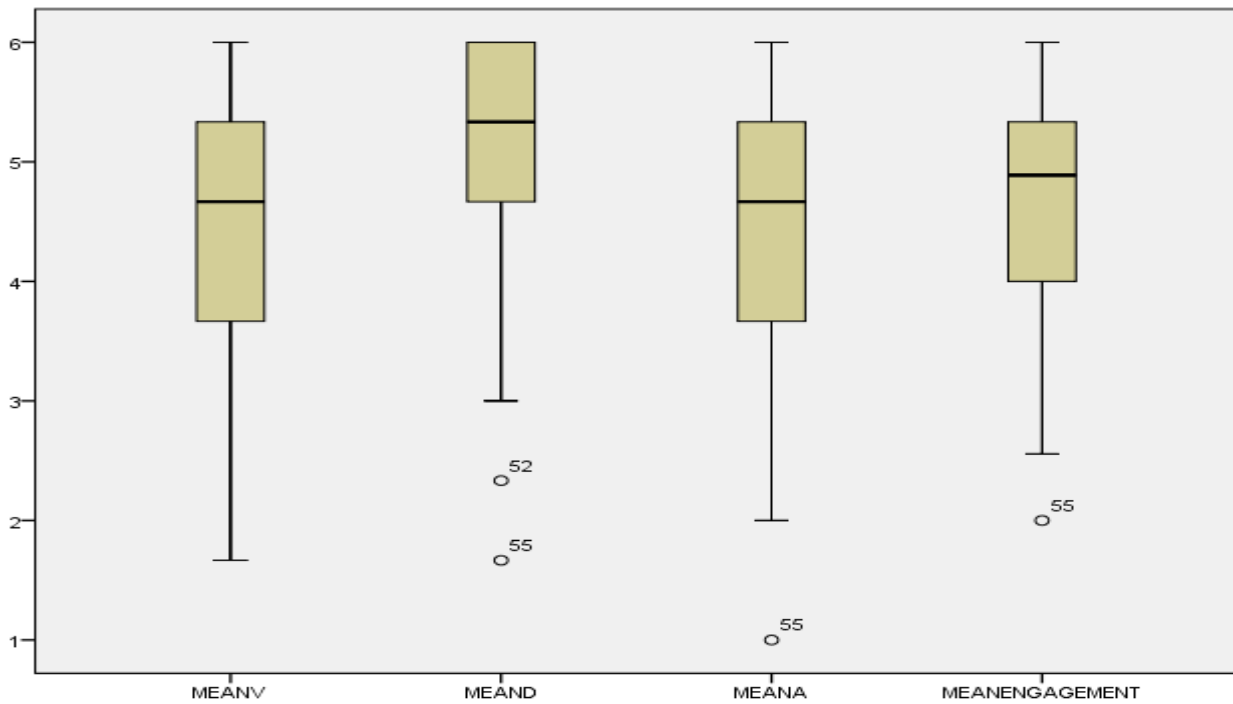
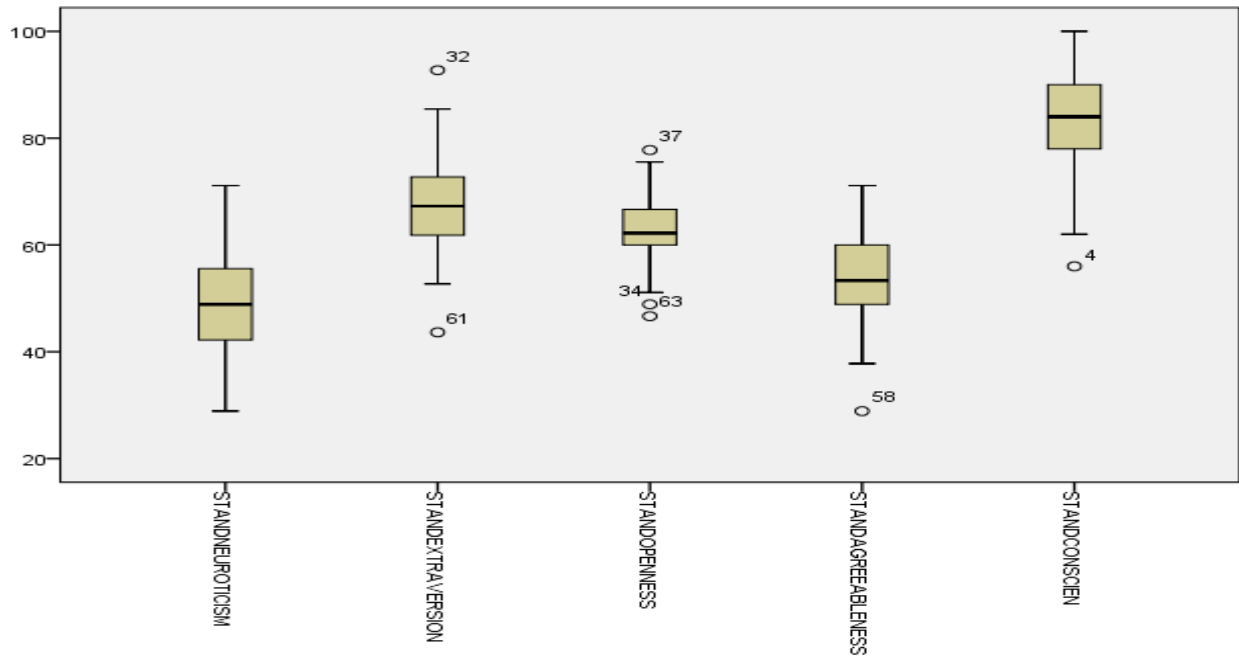
Παρακαλώ δηλώστε το βαθμό που συμφωνείτε ή διαφωνείτε σε καθεμία από τις παρακάτω δηλώσεις.

| 1 | 2 | 3 | 4 | 5 |
|----------------------------|-----------------------------|--|-----------------------------|----------------------------|
| Διαφωνώ Απόλυτα | Διαφωνώ εν μέρει | Ούτε συμφωνώ ούτε διαφωνώ | Συμφωνώ εν μέρει | Συμφωνώ Απόλυτα |

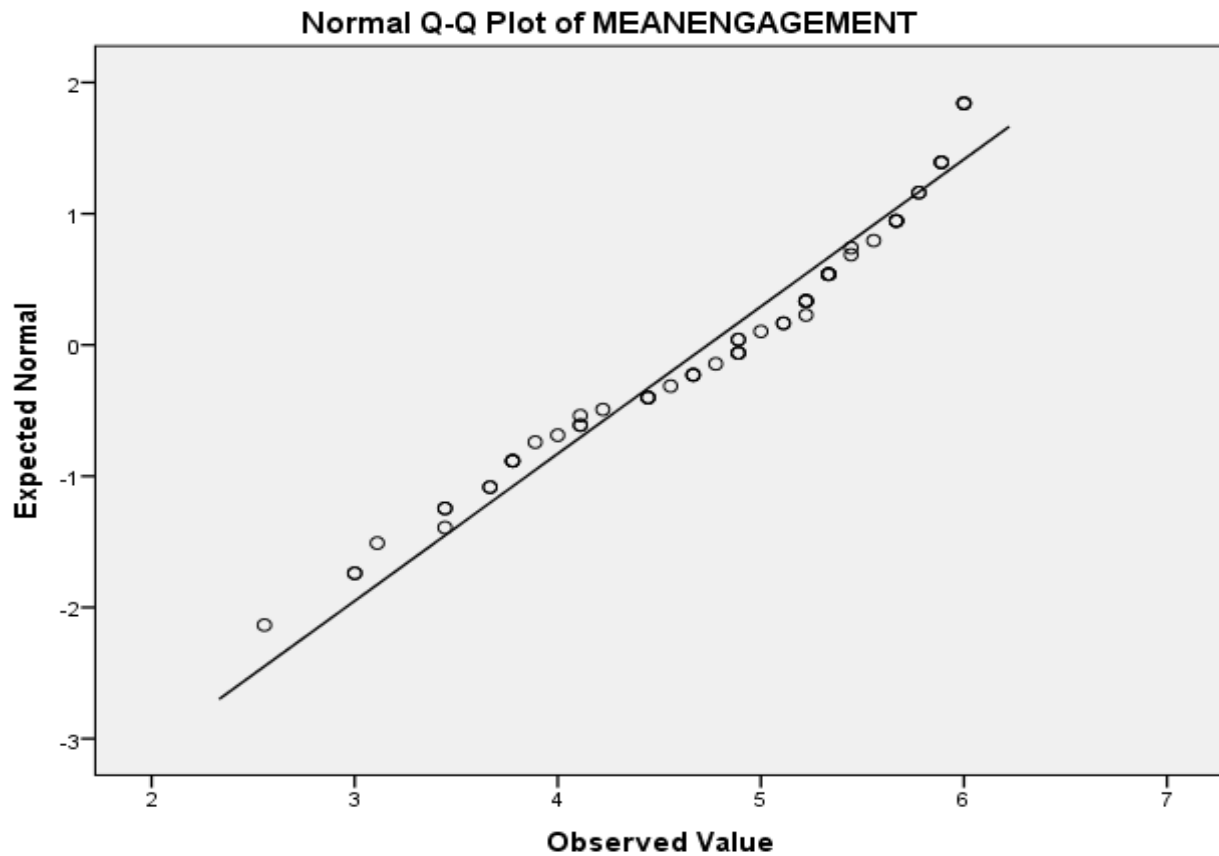
| # | Ερωτηματολόγιο Προσωπικότητας | 1 Διαφωνώ απόλυτα 2 Διαφωνώ εν μέρει 3 Ούτε συμφωνώ ούτε διαφωνώ 4 Συμφωνώ εν μέρει 5 Συμφωνώ απόλυτα | | | | |
|----|--|--|---|---|---|---|
| 1 | Αγχώνομαι όταν περιμένω το αποτέλεσμα για την έκβαση κάποιου γεγονότος | 1 | 2 | 3 | 4 | 5 |
| 2 | Μοιράζομαι πολλές προσωπικές πληροφορίες με συναδέλφους | 1 | 2 | 3 | 4 | 5 |
| 3 | Κατεβάζω πολλές ιδέες | 1 | 2 | 3 | 4 | 5 |
| 4 | Προτιμώ να εκφράζω τη γνώμη μου παρά να ακούω τη γνώμη άλλων | 1 | 2 | 3 | 4 | 5 |
| 5 | Είμαι τελειομανής | 1 | 2 | 3 | 4 | 5 |
| 6 | Παίρνω την κριτική προσωπικά | 1 | 2 | 3 | 4 | 5 |
| 7 | Κρατάω την ψυχραιμία μου | 1 | 2 | 3 | 4 | 5 |
| 8 | Προτιμώ να ακολουθώ διαδικασίες αντί να τις επινοώ (σκέφτομαι) | 1 | 2 | 3 | 4 | 5 |
| 9 | Δεν μπορώ να κρατήσω την γνώμη μου για τον εαυτό μου | 1 | 2 | 3 | 4 | 5 |
| 10 | Δεν με ενοχλεί η ανακατωσούρα, ακαταστασία | 1 | 2 | 3 | 4 | 5 |
| 11 | Διευκολύνω τη συζήτηση | 1 | 2 | 3 | 4 | 5 |
| 12 | Είμαι ήρεμος εν μέσω αντιπαράθεσης | 1 | 2 | 3 | 4 | 5 |
| 13 | Διοργανώνω μαζώξεις | 1 | 2 | 3 | 4 | 5 |
| 14 | Ερευνώ καινούργιες θεωρίες εντός και εκτός της ειδικότητάς μου | 1 | 2 | 3 | 4 | 5 |
| 15 | Ακολουθώ, δεν είμαι ηγέτης | 1 | 2 | 3 | 4 | 5 |
| 16 | Μου αρέσει η τάξη και η καθαριότητα | 1 | 2 | 3 | 4 | 5 |
| 17 | Αναζητώ την προσωπική επαφή | 1 | 2 | 3 | 4 | 5 |
| 18 | Κρατάω την ψυχραιμία μου όταν δέχομαι επίθεση | 1 | 2 | 3 | 4 | 5 |
| 19 | Έχω πολλή ενέργεια | 1 | 2 | 3 | 4 | 5 |
| 20 | Έχω γνώσεις για πολλά θέματα | 1 | 2 | 3 | 4 | 5 |
| 21 | Μου αρέσει να νικάω | 1 | 2 | 3 | 4 | 5 |
| 22 | Τακτοποιώ τα πράγματα στη θέση τους | 1 | 2 | 3 | 4 | 5 |
| 23 | Παίρνω την απόρριψη προσωπικά | 1 | 2 | 3 | 4 | 5 |
| 24 | Είμαι χαρισματικός/η | 1 | 2 | 3 | 4 | 5 |
| 25 | Μου αρέσει να αλλάζω τις διαδικασίες | 1 | 2 | 3 | 4 | 5 |
| 26 | Μου αρέσει ο έπαινος που παίρνω μπροστά σε άλλους | 1 | 2 | 3 | 4 | 5 |
| 27 | Δεν ανέχομαι λιγότερο από το 100% της προσπάθειας | 1 | 2 | 3 | 4 | 5 |
| 28 | Είμαι σίγουρος/η για τον εαυτό μου | 1 | 2 | 3 | 4 | 5 |

| # | Ερωτηματολόγιο Προσωπικότητας | 1 Διαφωνώ απόλυτα 2 Διαφωνώ εν μέρει 3 Ούτε συμφωνώ ούτε διαφωνώ 4 Συμφωνώ εν μέρει 5 Συμφωνώ απόλυτα | | | | | | | | | | | | | | |
|--|--|--|---|----------------------|---|----------------|--|--------------|--|-------------------|---|--------------|---|---|---|---|
| 29 | Αντιστέκομαι στην ανάληψη ηγετικών θέσεων | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 30 | Ψάχνω πρωτοποριακές προσεγγίσεις σε διάφορα θέματα | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 31 | Δεν αισθάνομαι άνετα όταν με επαινούν | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 32 | Έχω ξεκάθαρους στόχους | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 33 | Επανέρχομαι - ξεπερνώ γρήγορα δυσκολίες, προβλήματα | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 34 | Δεν μου αρέσουν οι ηγετικές θέσεις | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 35 | Νιώθω άνετα δίνοντας προσοχή στη λεπτομέρεια | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 36 | Εκφράζω την γνώμη μου αμέσως | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 37 | Αποσπάται η προσοχή μου εύκολα | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 38 | Ξεπερνώ εύκολα την απογοήτευση | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 39 | Τα πάω καλά όταν δουλεύω με άλλους | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 40 | Μου αρέσει να προσέχω τη λεπτομέρεια | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 41 | Λέω την γνώμη μου ελεύθερα | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 42 | Αλλάζω εργασία πριν την ολοκληρώσω | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 43 | Προσπαθώ να αναπτύξω σχέσεις με πολλούς συνεργάτες | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 44 | Μου αρέσει να μένω στο παρασκήνιο, να μην προκαλώ | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 45 | Είμαι πάντα προετοιμασμένος/η | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 46 | Εμπνέω τους άλλους να δράσουν | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 47 | Προτιμώ άλλοι να μιλούν στις συγκεντρώσεις | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| 48 | Είμαι πάντα οργανωμένος/η με ελάχιστη προσπάθεια | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | |
| Ερωτηματολόγιο Εργασίας και Ευημερίας | | | | | | | | | | | | | | | | |
| 0 | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | | | |
| Ποτέ | | Σχεδόν ποτέ | | Μερικές φορές | | Τακτικά | | Συχνά | | Πολύ συχνά | | Πάντα | | | | |
| 1 | Στην εργασία μου αισθάνομαι να πλημμυρίζω από ενεργητικότητα | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | Νιώθω γεμάτος/η ζωντάνια και δύναμη όταν εργάζομαι | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | Είμαι ενθουσιασμένος/η με την εργασία μου | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | Η εργασία μου με εμπνέει | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 | Όταν σηκώνομαι το πρωί έχω διάθεση να πάω στην δουλειά μου | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 6 | Νιώθω ευτυχισμένος/η όταν εργάζομαι με εντατικούς ρυθμούς | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | Νιώθω υπερήφανος/η για την εργασία που κάνω | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 8 | Είμαι τελείως απορροφημένος/η από την εργασία που κάνω | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 9 | Η δουλειά μου με συναρπάζει | | | | | | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

APPENTIX 2 OUTLIERS



APPENTIX 3 Q-Q PLOT OF ENGAGEMENT MEAN AND NORMALITY TEST



Tests of Normality

| | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|----------------|---------------------------------|----|------|--------------|----|------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| MEANENGAGEMENT | ,123 | 60 | ,025 | ,948 | 60 | ,012 |

a. Lilliefors Significance Correction

APPENTIX 4 SCATTERPLOT OF ENGAGEMENT MEAN

